

ing the greater part of the cell on the under side of the hind wing. In *selene* this dot is large and is typically not ringed with lighter. In *myrina* it is small and is ringed more or less completely with silver or with light yellow. But even this character is undependable. A specimen of *selene* at hand from Rennes, France, in this as in other features is almost an exact duplicate of another from Tolland, Colo., and if the place of origin were unknown it would certainly be referred to the form *tollandensis*. A specimen from Hopedale, Labrador, is very close to others from northern Europe and perhaps should be referred to the same subspecies.

The North American forms now grouped under *Brenthis myrina* should be listed as:

- Brenthis selene myrina* (Cramer)
- Brenthis selene atrocotalis* Huard
- Brenthis selene terrae-novae* Holland
- Brenthis selene nebraskensis* Holland
- Brenthis selene tollandensis* Barnes and Benjamin
- Brenthis selene marilandica*, subsp. nov.

***Brenthis selene marilandica*, subsp. nov.**

Diagnosis.—Resembling *Brenthis selene myrina* but larger, the fore wings 22–25 (averaging 23.75) mm in length, and with the ground color above darker and more reddish and the black markings broader and heavier, often much heavier so that they are more or less extensively confluent; on the under surface the color varies from about as dark as in the darkest *myrina* (from Massachusetts) to very appreciably richer, with the black markings on the under side of the fore wings always heavier.

Type.—From the boggy pasture on the south side of the road from the Beltsville, Md., railway station to the Department of Agriculture experiment farm, collected by Austin H. Clark on July 6, 1929 (U.S.N.M. no. 55470, figured in U. S. Nat. Mus. Bull. 157, pl. 3, figs. 5, 6, 1932).

Remarks.—This form has only a single brood, flying from the end of June (earliest date June 29) to about the end of July. In the past it was rather common in the type locality, but it has not been found in recent years. No other locality for it is known. The common form of this species in Maryland and in western Virginia is *myrina*.

ENTOMOLOGY.—*Five new Guatemalan scarab beetles of the genus Phyllophaga*.¹ LAWRENCE W. SAYLOR, U. S. Fish and Wildlife Service.

Opportunity is taken herewith to characterize five new species of Scarabaeidae from Guatemala. All belong to the genus *Phyllophaga* Harris (subgenus *Phyllophaga*), and the holotypes of all are in the author's collection.

¹ Received May 13, 1941.

Phyllophaga (Phyllophaga) duenas, n. sp.

Male.—Oblong-ovate, slightly wider behind; color rufocastaneous, faintly pruinose above; dorsal surface griseopilose. Clypeus moderately long, the apex truncate, entire, and slightly reflexed, with the angles broadly rounded; disk very densely and coarsely punctate. Front coarsely scabrose, with long erect hairs. Antennae 10-segmented, rufotestaceous; club ovate, equal in length to segments 3-7 combined. Thorax with sides dilated, ciliate, hardly crenulate, straight before the dilation and slightly sinuate behind; front angles subrectangular, hind angles obtuse; disk with very dense and fine punctures, each separated by about its own diameter, those in apical half and at sides faintly scabrose and very slightly larger, all discal punctures with short, suberect, griseous pile and a few slightly longer hairs near center apex. Elytra ecostate, sutural costa not well defined; disk with the fine, dense punctures separated by once their diameters, and all with short, suberect, griseous hairs, with a few longer hairs near base of disk. Pygidium slightly convex, pruinose, and punctured like the elytra, with very short suberect hairs mixed with short erect hairs, apex reflexed and slightly thickened. Abdomen pruinose, flattened, slightly longitudinally impressed, surface very finely and densely punctate, with short procumbent hairs; fifth sternite faintly, lobately produced at midapical margin, disk flat and with a dense median patch of small granules and short hairs; sixth sternite half the length of fifth, the basal margin thickened and carinate with the middle base lobately reflexed toward the apical margin and the apex of this lobe forming a somewhat broad transverse carina that is slightly tumid at each end; apical margin carinate, though narrowly interrupted at the middle, and ciliate; disk densely and finely punctate, with long erect hairs. First segment of hind tarsus shorter than second; spurs free. Claws with basal tooth submedian in position and a little broader and longer than apical tooth, also faintly reflexed toward the base; claw base broad and very obtusely dilated. Length 16.5 mm.

The unique male holotype, in the Saylor collection, is from "Duenas, Guatemala." The species is related to *P. abdominalis* Moser, but the sixth abdominal sternite is quite different and the abdomen is slightly impressed.

Phyllophaga (Phyllophaga) nepida, n. sp.

Male.—Robust-oval, wider behind; color piceocastaneous, thorax dull and faintly pruinose, dorsal surface haired. Clypeus short, transverse, and nearly rounded, the apex entire and slightly reflexed, the angles hardly indicated; disk densely, coarsely, and setigerously punctate. Front densely and coarsely punctured, with short erect hairs. Thorax with sides slightly dilated, ciliate, entire, and subparallel behind, angles obtuse but well indicated; disk evenly punctate, with moderately coarse, dense, variolate punctures, each separated by more than once its diameter on disk, though closer at sides, and each with a short suberect hair; front margin with long cilia. Elytra, except for the sutural rib, ecostate; disk densely punctured, as thorax, with short, suberect, griseous pile and a few longer intercalated hairs on suture and near base. Pygidium slightly convex, polished, basal half pruinose; disk densely and coarsely punctate, with short erect hairs of two lengths; apex truncate and ciliate. Abdomen pruinose, flattened, and faintly longitudinally sulcate at middle; fifth sternite declivous at apex, with a large patch of granules at middle and short erect hair; sixth nearly as long as fifth, transversely flattened and subgranulately punctate, with a faint, smooth, longitudinal impression; the basal margin somewhat thickened and subcarinate, though interrupted at middle. First segment of hind tarsus shorter than second;

spurs free. Claws short, robust, basal tooth short and triangular and slightly basad of middle, the base hardly dilated. Genitalia of the bilaterally symmetrical, complete, ring-shaped type; in *en-face* view the lateral angles are moderately long, very sharp, and somewhat convergent toward the center, the center underpiece well indicated and divided into two sharp, subparallel, slender teeth.

Female.—Antenna club ovate and equal in length to segments 3–7 combined; the front thoracic angles rectangular and the hind angles nearly so; elytra with very sparse longer hairs all over the surface, those at base somewhat thicker than corresponding hairs of the male; pygidium more flattened and a little more coarsely punctate in apical half; abdomen flattened, the fifth and sixth sternites plane and densely and setigerously punctate; otherwise similar to male. Length 14–15 mm.

The holotype male, allotype female, and paratype female, which remain in the Saylor collection, are from "Finca San Juan, Alta Vera Paz, Guatemala." They were collected by Felix A. Muenchmeyer. This species is near *P. wittkugeli* Nonfried but differs in the male genitalia and the dorsal sculpture.

Phyllophaga (Phyllophaga) ferupilis, n. sp.

Male.—Elongate-subparallel; color rufocastaneous and slightly shining, above entirely griseopilose. Clypeus long, flat, nearly trapezoidal, the apex subtruncate and entire, the angles narrowly rounded; disk very coarsely and densely punctate, with erect hairs. Front coarsely and contiguously punctate, with short erect pile. Antennae 10-segmented, rufous; club very long, subequal in length to the entire stem; segments 5–7 with short spines on the inner apical margin. Thorax, elytra, and pygidium with extremely fine and extremely dense punctures over the entire surface, with short procumbent hairs; on the elytra adjoining the scutellum there are several longer hairs, which, however, are still rather fine. Thorax with the sides dilated in front of middle, ciliate, entire in front and crenate behind the dilation; angles obtuse but angulate. Elytra with a strong membranous margin, the sutural costa weakly indicated; sutural costae hardly obvious at base and apex. Pygidium faintly convex, its apex subrounded and reflexed. Abdomen punctured and haired like the elytra, its center flat; fifth sternite very slightly prolonged at middle of the apical margin into a small lobe, disk with a dense patch of fine granules; sixth sternite half the length of fifth, transversely sulcate and punctate, basal margin much thickened and subcarinate, especially at the middle, where there is a very small, triangular, apical gibbosity, which is impressed at center and slightly granulate each side; apical margin of sixth sternite carinate and ciliate and interrupted at the middle. First two hind tarsal segments subequal, the spurs free and very graceful. Claws with a sharp basal tooth, which is median in position and of nearly same size and length as apical tooth; claw base angularly dilated but obtuse. Genitalia bilaterally symmetrical; in lateral view the lateral margins are greatly rounded and overhang the small and bidentate median underpiece. Length 24.5 mm.

The unique male holotype, in the Saylor collection, was collected by Felix A. Muenchmeyer at "Finca San Juan, Alta Vera Paz, Guatemala." The species is near *P. ferrugata* Moser but is much larger, and the abdominal characters are distinct.

Phyllophaga (Phyllophaga) totonis, n. sp.

Male.—Oblong-ovate; color castaneous, shining, head and thorax piceo-castaneous; hairy above. Clypeus moderately long, apex hardly reflexed,

very narrowly but distinctly emarginate, the angles very broadly rounded, disk with coarse, dense, setigerous punctures. Front very densely, coarsely, and scabrosely punctate, with very long brownish hair. Antenna 10-segmented, rufobrunneous; club long, about one-fourth longer than funicle but hardly as long as the entire stem. Thorax with sides strongly dilated, with long cilia, straight before dilation and noticeably sinuate behind it, the margins subcrenate; front angles obtuse, hind angles distinctly rectangular; disk with dense, moderately coarse, umbilicate punctures, each separated by once its diameter, or slightly more, somewhat closer at sides, all punctures with very long erect hairs and without intercalated shorter hairs; an area of disk at each lateral dilation, and along base each side of the middle to the hind angles, smooth and impunctate. Scutellum impunctate. Elytra with sutural stria strong and with a moderately indicated, oblique first discal stria, which becomes progressively wider toward the apex, where it is evanescent; disk rugose, punctures small, irregularly and not densely placed, with very long hair near scutellum and along lateral margins, the disk with a few short, scattered hairs. Pygidium convex, polished; disk rugose, the punctures very fine and dense and with fine erect hair of short to moderate length; apex widely subrounded. Abdomen flattened, highly polished, middle glabrous and very finely and sparsely punctate; fifth sternite somewhat declivous behind, basal fourth smooth, apical portion with a small patch of fine dense punctures; sixth sternite faintly longer than fifth, widely shallowly foveate, the disk densely and finely subgranulate and punctate at sides with long erect hairs. First segment of hind tarsus a little shorter than second. Claw widely cleft, the upper tooth nearly twice as broad as apical and apex obliquely truncate; both teeth of approximately the same length; claw base distinctly though obtusely dilated. Genitalia bilaterally symmetrical, the lateral lobes free at apex though touching; in *en-face* view the lateral lobes have each a short thumblike lobe at the middle projecting upward, and at the lower apex each lateral lobe is very broad and the apex is emarginate, the two blunt inner lobes touching or slightly overlapping at the center. Length 13.5 mm.

The unique male holotype, in the Saylor collection, is from "Quicke Totonicapan, Guatemala, May." The species is near *Phytalus xanthocomus* Bates but differs in the pygidial characters and antennal length. From *P. castaneipennis* Moser, *totonis* differs in the clypeal form and in the elytral characters.

Phyllophaga (Phyllophaga) mentalis, n. sp.

Male.—Oblong-oval, widest behind; color rufotestaceous and strongly shining, head and thorax rufous; very nearly glabrous above. Clypeus flat and very broad; apex slightly reflexed and very narrowly sinuate at middle; the angles very broadly rounded; disk with somewhat coarse, moderately dense, irregularly placed punctures. Front sparsely punctate like the clypeus, with very sparse, short, erect hairs near sides. Vertex impunctate. Antenna 10-segmented, rufotestaceous; club ovate and minute, scarcely equal in length to segments 5-7 combined. Thorax with sides arcuate, nearly entire, and slightly ciliate, the angles rounded; base not margined at middle; front margin thickened and slightly sinuate; disk with somewhat coarse, moderately dense punctures, which are slightly less dense at center. Scutellum punctate. Elytra with two discal striae, other than sutural, weakly indicated; disk punctured as thorax but a little more densely and more irregularly so. Pygidium polished, slightly convex, glabrous, disk punctured like the thorax, the punctures a little finer. Abdomen convex, highly polished, and very finely not densely punctate at middle, with a few short scattered

hairs; fifth sternite no different from third and fourth; sixth sternite three-fifths the length of fifth and widely transversely impressed, the apex and base slightly thickened, carinate, and not interrupted, except very narrowly at apex; disk of sixth sternite wrinkled and not obviously punctate, apparently glabrous and with a very fine longitudinal sulcus. First segment of hind tarsus slightly shorter than second; spurs free. Claw very short and robust, the basal tooth very small, short, and strongly inclined toward, but narrowly separated from, the weakly dilated claw base. Mid and hind tibiae each with several small serrations on the outer margin. Labrum large, very deeply and narrowly cleft to base. Mentum very deeply and longitudinally sulcate. Length 19 mm.

The unique male holotype, in the Saylor collection, is from "Trece Aguas, Cacao, Guatemala." The species appears to be quite different from any known to me in a number of characters but somewhat approaches *P. parvicornis* Moser, from which it may be separated by the different abdominal structure, densely punctate pygidium, and punctate scutellum.

ZOOLOGY.—*Notes on Mexican snakes of the genus Masticophis.*¹

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The following notes are based on the Mexican whipsnakes in the U. S. National Museum (to which specimen numbers refer, unless otherwise indicated), and on a portion of the E. H. Taylor-H. M. Smith Mexican collection. I am much indebted to Dr. E. H. Taylor for loan of material and other courtesies too numerous to mention. A portion of the specimens were collected during my tenure of a Walter Rathbone Bacon Traveling Scholarship, of the Smithsonian Institution.

Masticophis mentovarius (Duméril and Bibron)

Eleven Mexican specimens are from the following localities: CHIAPAS: Tonalá (no. 111270); near Colonia Soconusco (no. 111269). OAXACA: Juchitán (no. 30231); Tehuantepec (nos. 30422-3, 111274-6); Cerro de Huamelula (no. 111272); Mixtequilla (no. 111271); Cerro Arenal (no. 111273). One in the EHT-HMS collection is from Rodriguez Clara, Veracruz (no. 5494).

All have seven labials, but in two the subocular labial (fourth) is partially split. A juvenile (Veracruz), measuring 448 mm in total length (tail 110 mm), has a narrow light stripe along adjacent edges of the third and fourth scale rows, mostly on the third; a similar stripe, a little more distinct, is on the adjacent edges of the first and second scale rows. Both stripes become very faint posteriorly and completely disappear at about the middle of the body.

This species, because of the rudimentary nature of the light stripes, presence of dark spots on the scales, absence of any marked peculiarity in pattern, and its geographical position, appears to represent the nearest approach to the ancestral type of pattern in the genus. From it all other pattern types of the genus may be derived, as a northward radiation of vicariating forms in three series. With *mentovarius* as the starting point, two primary series are evident: one in which cross bands are present and one in which stripes are

¹ Received April 10, 1941.